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ABSTRACT

In Canada today, more than a million children spend a large portion of their preschool years in child care outside the immediate family. The design of a child care center's physical facility has a major impact on the quality of interactions that take place within it. Intended to assist design and child care professionals who are building a new child care center or renovating an existing one, this resource guide and accompanying videotape present an overview of some important design principles that influence the effectiveness of any child care center. The principles detailed in the guide are: (1) Pre-design Issues--location, size, neighborhood connections; (2) Site Planning--positive orientation, safe circulation; (3) Building Design--residential scale, village plan approach, common core; (4) Interior Space Design--modified open plan, group size, home bases, activity pockets, internal spatial zoning, clear circulation, friendly image; (5) Outdoor Space Design--play yards, indoor-outdoor connections. The accompanying video reiterates the text of the guide and illustrates the design principles discussed. (HTH)



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# CHILD CARE BY DESIGN

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## Resource Guide

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# CHILD CARE BY DESIGN

## Resource Guide

**Edited by:**

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**1995**

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# Table of Contents


Preface . . . . . 1

Introduction . . . . . 3

Pre–design Issues . . . . . 5
Location . . . . . 5
Centre Size . . . . . 6
Neighbourhood Connections . . . . . 8

Site Planning . . . . . 9
Positive Orientation . . . . . 10
Safe Circulation . . . . . 10

Building Design . . . . . 11
Residential Scale . . . . . 11
Village Plan Approach . . . . . 14
Common Core . . . . . 16

Interior Space Design . . . . . 17
Group Size . . . . . 18
Home Bases . . . . . 18
Activity Pockets . . . . . 20
Internal Spatial Zoning . . . . . 21
Clear Circulation . . . . . 21

Outdoor Space Design . . . . . 23

Summary . . . . . 25

Suggested Readings . . . . . 26

# Preface

The objective of this video and accompanying resource guide is to assist design and child care professionals who are building a new child care centre or renovating an existing one. **Child Care by Design** presents an overview of some important design principles that influence the effectiveness of any child care centre. The principles are based on the conviction that the most important attribute of any design solution is how positively it contributes to children's development and well–being.

It is important that you familiarize yourself with legislated requirements for child care centres as well as building standards and local zoning requirements that will apply to your location. Legislated provincial territorial state requirements for child care in Canada and the United States contain such elements as minimum requirements for indoor and outdoor space, windows, and group sizes. These requirements (sometimes called standards or regulations) are designed to set minimum requirements to obtains a child care license, and do not necessarily represent optimal physical requirements.

Child care legislation in Canada can be obtained from each provincial territorial child care office whose addresses are listed in the Childcare Resource and Research Unit's *Child Care in Canada: Provinces and Territories, 1993*, listed at the back. In the United States, state child care legislation is available from each state government; addresses for each child care office are listed in the Child Care Action Campaign's *Current State Day Care Licensing Offices*.

Whether you are building a new child care centre or renovating an existing one, some of these ideas will be appropriate for your situation. While no single facility will be able to implement **all** of the design principles, it is obvious that the more that can be implemented, the better.

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# Introduction

In Canada today, more than 60% of all mothers with preschool children work away from home at paid jobs. As a result, more than 1½ million Canadian children spend a large portion of their preschool years in child care outside the immediate family. These numbers are increasing every year.

As demand for child care outside the family has grown, so too has awareness that it is vital to ensure that child care is the best quality it can possibly be.

**High quality child care plays a positive role in children's development**

- through interaction with dedicated, well-trained child care professionals;
- through carefully planned and developmentally appropriate programming; and
- through an underlying child care philosophy that is culturally sensitive, inclusive of special needs, and firmly child-centred.

Quality in child care matters for children. And the design of a child care centre's physical facility has a major impact on the quality of interactions that take place within it. Research demonstrates clear connections between specific aspects of architecture and design, teachers' performance, and children's behaviour and development.

For all involved in the planning of a child care facility, the challenge is to convert what we have learned about child care design into practice. To accomplish this, it is important that design professionals have a clear understanding of the particular needs of child care centres. In turn, it is essential that child care professionals and policy makers understand not only the principles of quality child care design but the design process as well. Both design and child care specialists must be aware of how design decisions will influence the eventual effectiveness of the child care centre.

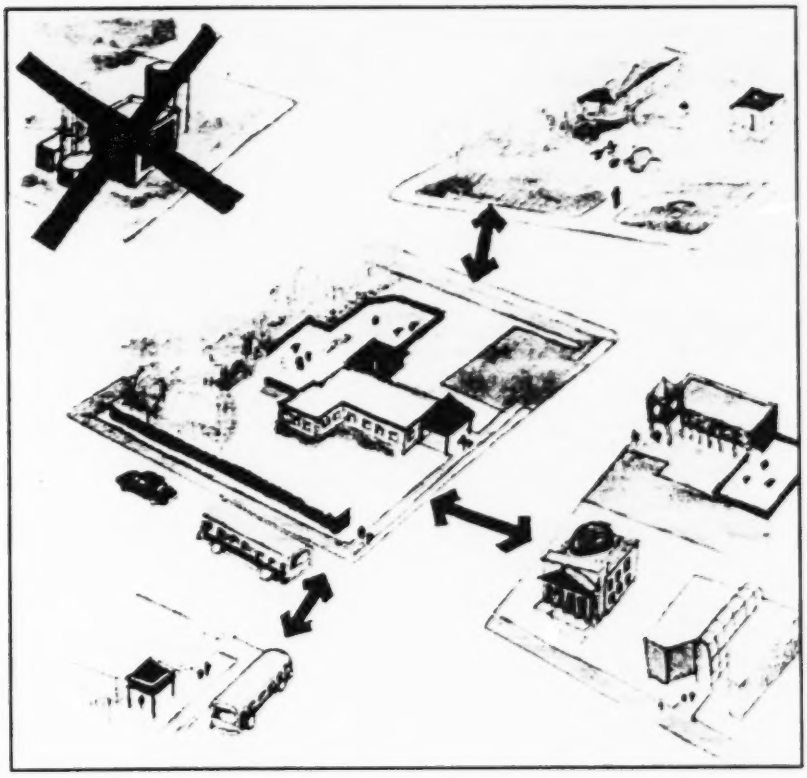
Working together, design and child care specialists can then translate this awareness into a child care centre that works to maximum benefit for the staff, the parents, the community, and most of all, for the children.

## What is high quality child care?

- adequate staff/caregiver:child ratio;
- stable, consistent staffing;
- small group sizes;
- staff/caregiver training in early childhood education;
- health and safety provision;
- supportive physical & administrative environment

## Pre-design Issues

Before actual design can begin, there are important decisions to be made about the centre's **location**, **size**, and **neighbourhood connections**.



### Location

For those planning a new child care centre (or renovating an existing one), the location may have already been determined. However, even if this is so, it is still important to be aware of specific attributes that make some locations better for child care centres than others.

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## Location attributes

- accessibility to site
- separation from major roads
- separation from pollution
- proximity to natural features
- proximity to community resources

The first of these **desirable location attributes** is good accessibility to the site by foot, by car, and by public transportation, while maintaining adequate separation from major roads.

Location away from noxious or dangerous industries or polluted areas is important, as is proximity to natural features like parks or views, and to community resources like libraries, museums, recreation centres, or shops.

## Centre Size

An essential location feature is that the site must be large enough to accommodate the required building, outdoor areas, and all zoning requirements, based on the second major pre–design question to be considered – which is **centre size.**

A key decision to be made in the development of any new centre is the number of children to be served. Here the principle is consistent with what every child care professional knows intuitively — that "smaller **is** better."

There is no magic number for centre size. In Canada, child care centres for more than fifty children are uncommon. But if a large centre is being considered, many of the desirable qualities of "smallness" can be maintained by dividing the centre into smaller components. Building design ideas to accomplish this are discussed later.

In terms of actual space allotment per child, it is known that too little space per child can inhibit spontaneity and contribute to aggressive behaviour, while too much space, on the other hand, can lead to increased random, non–task behaviour.

**City of Vancouver's Minimum Recommended Indoor and Outdoor Space: Individual Age Groups**

| Age Group | Indoor Area | Outdoor Area |
|---|---|---|
| Infant | 82 $m^2$ | 85 $m^2$ |
| Toddler | 82 $m^2$ | 170 $m^2$ |
| Preschooler | 78 $m^2$ | 140 $m^2$ |

Based on 12 spaces. In 1993, the recommended indoor area is exclusive of stairwells, elevator shafts, and lobbies.

Source: City of Vancouver, Planning Department. (1993). *Child care design guidelines: Land use and development policy and guidelines.* Vancouver, British Columbia: Author.

The optimum middle ground for centre size will depend on the ages of the children and the types of activities to be accommodated. The overall size of the building must also include adequate space for storage, staff, kitchen, circulation, transitions, and mechanicals.

## Neighbourhood Connections

A third important pre–design issue to consider is how the child care facility can be integrated with other children's resources in the community. An ideal plan would have the group child care centre as part of a **network of neighbourhood child care facilities**. This "Neighbourhood Hub Model" may include other child care centres and nursery schools, a family resource centre, regulated family day care homes, a toy lending library, and other children's and family services and facilities.

Shared resources among such facilities can result in increased efficiencies and reduced costs, while assuring the community of a broad and varied network of children's and family services.

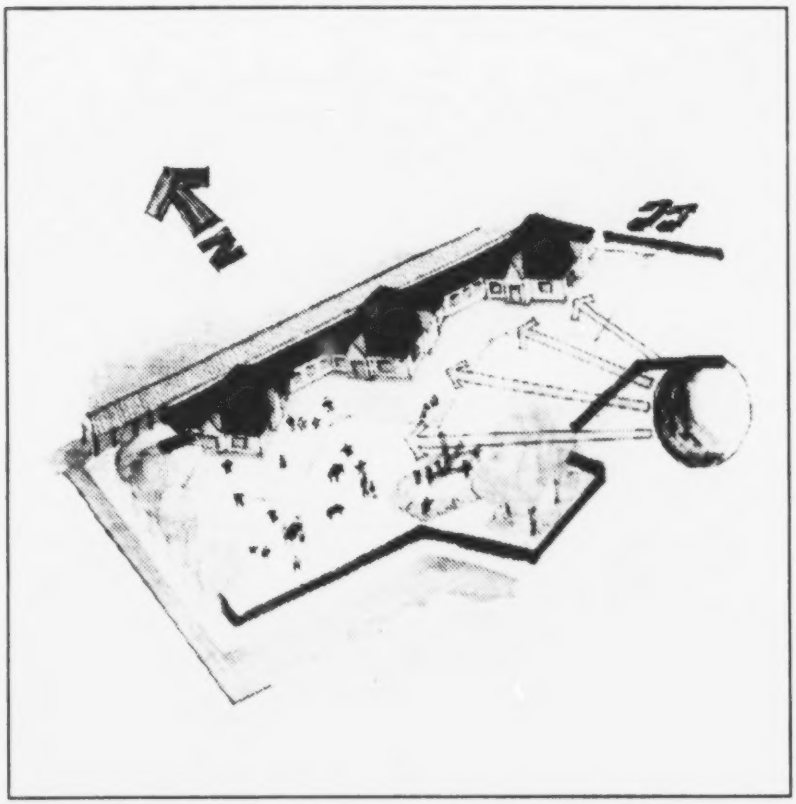
### Neighbourhood Hub Model

The child care centre is part of a network of resources including

- other child care centres
- family resources centres
- regulated family day care homes
- toy lending library
- parent education
- parent-child drop-in centre
- other children's services

## Site Planning

**Site planning** must accommodate not only the child care centre itself, but also outdoor activity areas, pedestrian and vehicular access, off–street parking, service drives and required zoning setbacks, and (if possible) landscaped open space.




The best placement of these elements within the site will be influenced by a variety of factors, but the two overriding principles should always be **positive orientation**, and **safe circulation**.

## Positive Orientation

**Positive orientation** means taking maximum advantage of sunlight by having both indoor and outdoor activity areas facing south. It means making the best use of the surrounding environment by maintaining pleasant views and blocking unpleasant ones. And it means the creation of favourable micro climates by capturing the sun and buffering prevailing winds through the use of both building and landscaping elements as windscreens.

## Safe Circulation

The site of the building and other facility elements should also recognize the need for **safe circulation** to and from the centre, and in outdoor activity areas. Site planning must, therefore, include safe pedestrian access points separated from automobile circulation, drop–off areas that are buffered from service and parking areas, and staff parking and service entrances that are separated or buffered from play areas.

### Positive Orientation

- take maximum advantage of sunlight
- maintain pleasant views
- block unpleasant views
- create favourable micro climates
- buffer prevailing winds

## Building Design

The primary purpose of any child care centre is to serve the developmental needs of children. Thus, the primary goal for all aspects of child care **building design** should be to enhance the social, motor, cognitive, and emotional development of the child.

### Residential Scale

Since the child care centre strives to be a home away from home, the scale should be **residential** in as many ways as possible, including such things as building height, friendly entry ways, and use of materials and design details that are compatible with the surrounding community.

# OVERVIEW OF

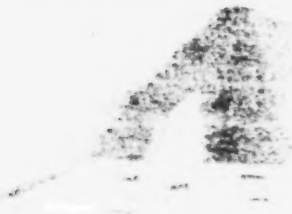
## PRE-DESIGN

- Desirable Location
- Smaller is Better
- Neighbourhood Networking

## BUILDING DESIGN

- Residential Scale
- Village Plan
- Common Core

# PRINCIPLES



## SITE PLANNING

- Positive Orientation
- Safe Circulation

## INTERIOR SPACE

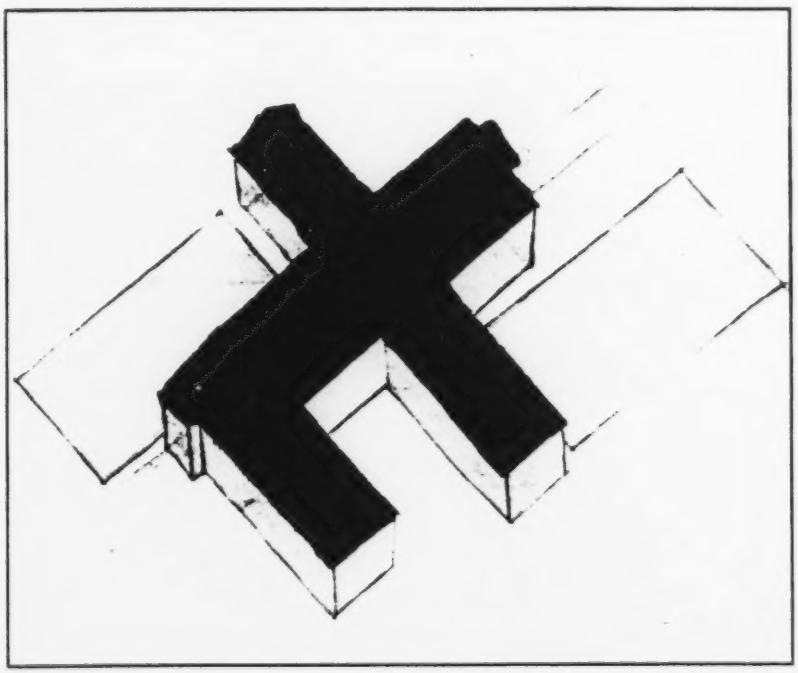
- Modified Open Plan
- Home Base
- Activity Pockets
- Spatial Zoning
- Clear Circulation

## Village Plan Approach

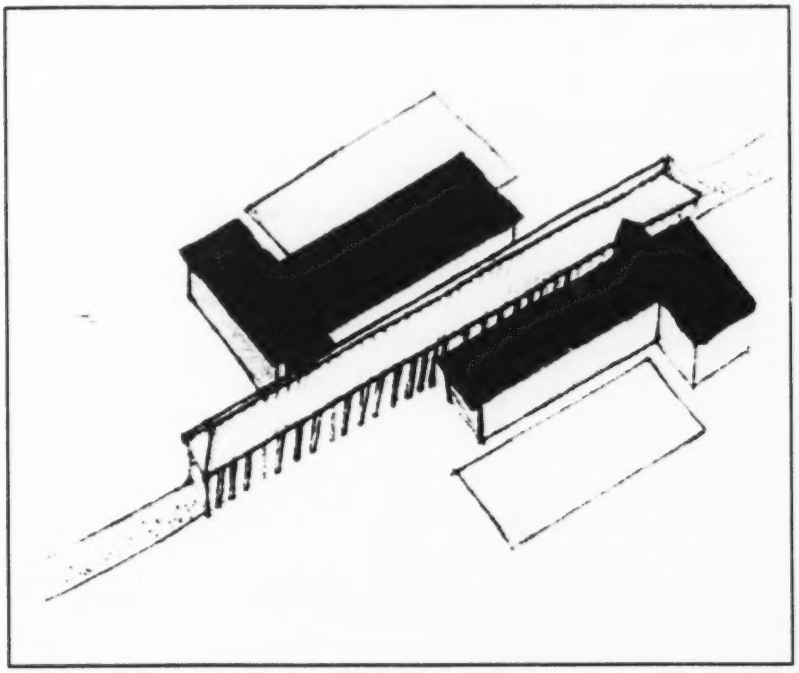
In cases where it is necessary to build a large child care centre clever building design can maintain residential scale by dividing the facility into a number of small "houses."

This **village plan** approach can be achieved in a number of different ways: through distinctive modules, wings, or suites; through the use of semi-detached buildings; or, through an array of totally detached buildings.

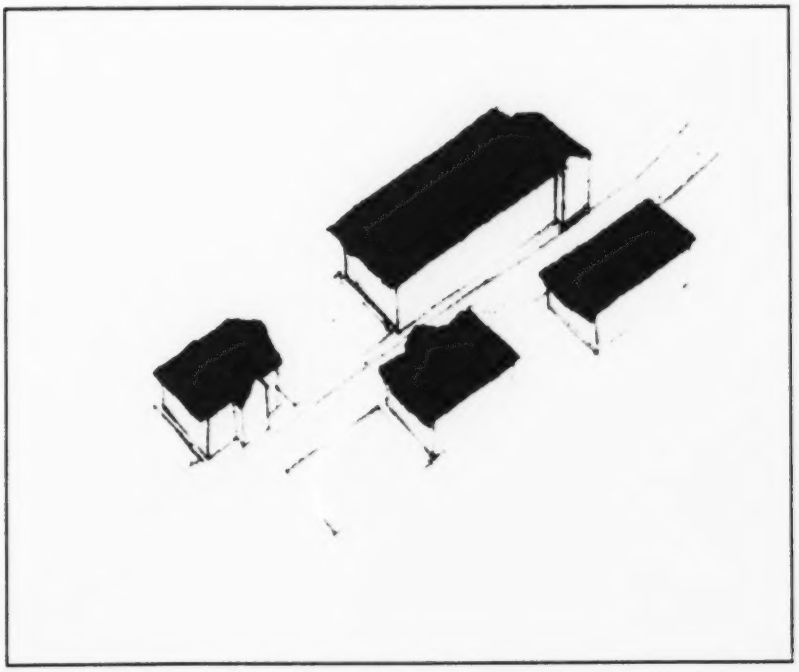
- Distinct Modules



- Semi detached buildings



- Totally Detached Buildings



Whatever the arrangement, it is essential that each "house" have its own separate entry from the outside, its own outdoor play yards, and its own partially decentralized administration. The goal is to make each house large and autonomous enough to have its own identity, yet small enough to retain the crucial quality of residential scale.

## Common Core

Whether the centre is based on a multi–unit village plan or a smaller single unit plan, some features of the child care facility may be shared and centralized within a **common core**.

Common core facilities may include a large multi–purpose commons room for use as an indoor gross motor activity area, or as an assembly area for dramatic productions, films, meetings, or social events. Other important central core facilities include open and accessible administration offices, staff room, kitchen, supply and equipment areas, and special areas like a lending book and toy library, or a green house.

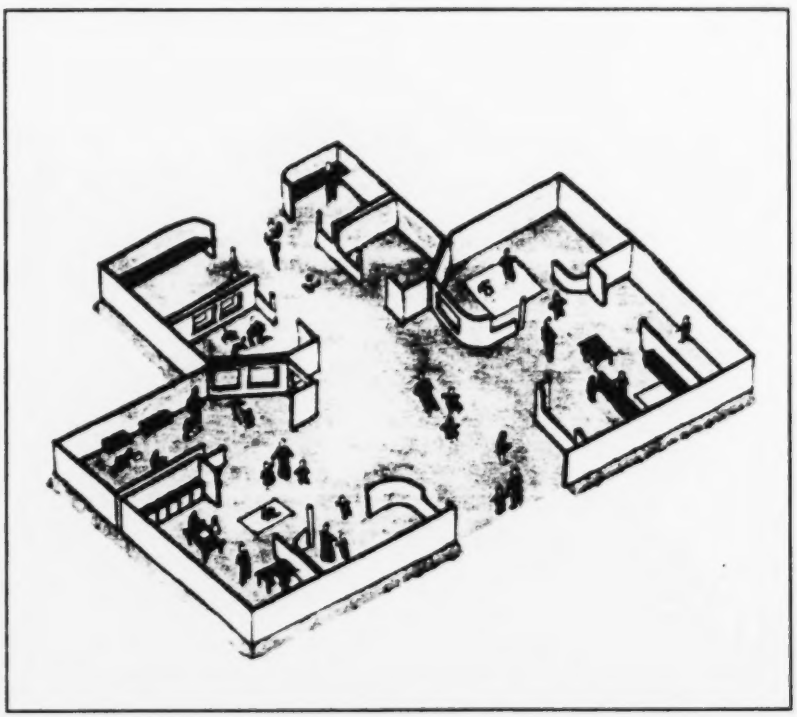
Depending on the overall design of the building, these common areas could form:

- A central building with the houses radiating outward from it
- An internal street within a semi–detached array
- A common building in the midst of stand–alone houses

## Interior Space Design

A much–debated issue relating to the design of educational facilities is which is best: open plan design, featuring large open spaces, or closed plan design, featuring smaller separate rooms.

Research has indicated that each design approach has its distinct advantages and disadvantages. A blending of the two approaches, however, can capitalize on each one's strengths, while minimizing each one's weaknesses.



The **modified open plan** approach features a variety of large and small activity areas which are open enough to allow children to see the variety of play possibilities available while at the same time maintaining enough

closure to protect from noise and visual distraction. It may use a variety of elements to define activity areas, such as changes in floor or ceiling heights, niches, and partial height movable partition systems.

In all these ways, a modified open–plan design allows for a great deal of flexibility and interest, while simultaneously providing just enough structure and definition to minimize confusion and distraction.

## Group Size

Another consideration which has an impact on internal space design is **group size**, with the goal being to allow each child to be part of a small group of peers with its own consistent staff for most of the child care day. Research shows that small group size is a vital feature of a high quality child care program. From the child's point of view, a small group means that the number of peers and key adults is finite and manageable, thus encouraging the development of close personal relationships, both child to child and child to adult.

## Home Base

One way that designers can best encourage this key attribute of small group size is through the creation of **home bases** — the areas in which each defined group will spend most of its time.

As such, each home base will include:

- child–scaled, friendly facilities for all of the child care routines;
- its own eating area designed to encourage self–reliance and socialization;
- diapering and toileting areas that are efficient for

both staff and children, and at the same time encouraging learning and good adult-child interactions;

- cubby areas designed and scaled not only for ease of use, but also to encourage socialization and to be practical as well;
- napping areas that are darkenable, and well-insulated from outside noise;
- in addition to providing good spaces for routines, home bases should also include sufficient areas for a variety of cognitive and sensory activities;
- comfortable reading and listening areas are especially important;
- for infants, home bases should include safe space for crawling and climbing, along with mirrors, mobiles, and other facilities for sensory play;
- for toddlers, home bases should be designed to accommodate such age–appropriate activities as sensory play, manipulative play, puzzles, and art; and,
- for preschoolers, home bases need to be designed to accommodate similar activities, but at a more advanced level.

### A home base should include

- facilities for routines
- own eating area
- napping area
- reading, listen & sensory activity areas;
- open and clear circulation

## Activity Pockets

In addition to activities taking place within the home base, separate areas can be designed for other specific activities.

To conserve on space, some activity pockets may be able to serve multiple functions. But since a well–designed area tailored for specific purposes can greatly enhance the activity's attractiveness and effectiveness, the more activity–specific the pocket, the better.

For example, a dramatic play activity pocket can be creatively designed to encourage and enhance dress–up, puppetry, and other forms of imaginative play.

A special messy activity pocket, with its own sink and other features that make for easier clean–up, can be a great boon to various age children, and to staff as well.

Small kitchen areas can be designed as activity pockets, allowing children to participate in preparation of snacks and cooking activities.

Whatever their specific function, all activity pockets should be architecturally well–defined in keeping with the modified open plan concept, and should always include convenient, adequate, and easily accessible storage.

## Internal Spatial Zoning

How activity pockets and home base areas are arranged is another important interior space design consideration. For child care centres, the concept of **internal spatial zoning** has two important rules of thumb.

**Zoning Rule #1:**

The first rule is to separate calm, quiet areas from active, noisy areas as much as possible, both spatially and though the use of noise and visual buffers.

**Zoning Rule #2:**

A second zoning rule is to arrange age–grouped home base and activity areas in chronological order — infant, toddler, preschool — in order to maximize use between adjacent areas and to minimize age differences in shared spaces.

## Clear Circulation

How people circulate between and within areas is another key design issue for a modified open plan arrangement. The concept of **open circulation** means circulation pathways that are sufficiently wide and free of obstacles to allow for good traffic flow, while simultaneously allowing the children to preview various activity areas through the use of half walls, windows, or other kinds of transparent barriers.

## Friendly Image

The final, vital dimension of interior space design concerns the overall image that the child care centre presents — its look and feel — and the operative words for child care are of course "bright," "warm," "friendly," "cozy," "inviting," and "homey."

Lighting plays a key role in creating the required friendly image, both through natural light, where large low windows allow sunlight in and at the same time allowing the children to see out, and also through artificial light, where the use of either tungsten or warm white fluorescent fixtures can provide the high level of diffuse interior lighting required, while at the same time achieving a homey warmth, rather than an institutional coolness.

Other important image–determining design decisions include the use of colour and texture, both of which can be used to add a great deal of internal variety, while at the same time reinforcing the identities and desired moods of different age–groups and activity areas.

Image considerations apply equally strongly to the child care's exterior as well, where the desired residential feel can be greatly enhanced through the use of home–like materials, textures, colours, and through appealing landscaping as well.

Good interior space design solutions can have a major positive impact on a child care centre's overall atmosphere, efficiency and effectiveness.

## Outdoor Space Design

The final broad area of design issues for child care centres is how outdoor areas are designed — its **play yards** and its **indoor–outdoor connections**. A key design principle for child care play yards is that they should maintain a residential backyard feeling to the fullest degree possible. One way to achieve this is by dividing outdoor areas in the same way that indoor areas are divided, with each group having its own distinct play yard immediately adjacent to an equivalent indoor activity space.

Consistent with the interior design principle of modified open plan, play yards too should be multi-functional, including not only adequate space for uninhibited gross motor play, but also activity pockets suitable for a variety of other kinds of activities, and possibly even fresh-air napping areas as well.

Other design principles that apply equally to both indoor or outdoor areas are the need to be developmentally appropriate, to have logical spatial zoning, and to have open circulation.

Of equal importance to the design of the outdoor areas are the various connections between the outdoor areas and their adjacent indoor areas. The goal of all such connections for child care centres should be to interconnect the indoors and outdoors in the most inviting and seamless way possible. Applying this principle means that each group will have its own separate connections between indoor and outdoor areas. Examples of this are the use of covered porches, decks, or vestibules that serve as transition areas between the indoors and outdoors, and also as protected outdoor activity pockets no matter what the weather.

Finally, seamless indoor-outdoor connections mean the use of lots of low windows between adjacent areas, allowing children on the inside to see out, and vice-versa.

### Indoor - outdoor connections

- each group has own connections and play yard
- covered decks or porches
- outdoor napping areas

## Summary

The creation of a new child care centre is an exciting process. The design issues and solutions outlined in **Child Care by Design** may point you in the right directions, but the hard work of turning ideals into realities will still be left to each development team.

In summary, the stages of designing or renovating a child care centre include:

- **Pre–design**
- **Site planning**
- **Building design**
- **Interior space design**
- **Outdoor space design**

Every dimension of child care centre development presents decisions to be made, issues to be resolved, compromises that must be accepted. Working closely together and armed with good mutual understanding, child care and design professionals can form a formidable team throughout the development process — a team dedicated to finding the best possible solution to each and every child care centre design issue, and creating the best child care centre ever.

## Suggested Readings

### Design

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# NOTES

## THE CHILDCARE RESOURCE AND RESEARCH UNIT

The Childcare Resource and Research Unit at the Centre for Urban and Community Studies, University of Toronto, is a policy and research-oriented facility that focuses on child care. The Resource Unit receives funding from the Child Care Branch, Ontario Ministry of Community and Social Services and Human Resources Development Canada.

The Resource Unit has a commitment to the development of a universally accessible, comprehensive, high quality, non-profit child care system. It contributes to advancement of this system by:

- providing public education, resources and consultation to groups and individuals;
- fostering, developing and carrying out research relevant to child care;
- facilitating communication on child care;
- providing interpretation of research and policy;
- organizing and disseminating information and resources.

The Resource Unit maintains a comprehensive library and computerized catalogue. Its facilities and resources are available to the interested public.

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